

# Quanta Extra

## GNSS aided Inertial Navigation System

0.005° ROLL/PITCH  
 0.01° YAW



Ultimate direct georeferencing performance for mobile mapping applications



### Performances without compromises

Cutting edge SBG fusion algorithms together with the highest IMU performances and GNSS receiver builds-up the most accurate INS system, tailored for demanding survey applications in the full foreseeable range of GNSS environments.

With an OEM form factor and a separated IMU, Quanta Extra is the position sensor for survey payloads that require maximum accuracy.

**An optional secondary antenna maintains highly accurate heading in the lowest dynamic conditions!**

### Quanta Extra KEY FEATURES

- » In class highest performance IMU
- » Disjoint IMU/GNSS+compute components for easy integration into your payload
- » High resilience to harsh GNSS including perturbed ionosphere, jamming and multipath
- » Built-in Motion profiles that optimize the INS for the application
- » Ethernet and PTP (or PPS) for easy integration with external sensors such as LiDAR
- » Complete suite of integration tools for OEM (REST configuration API, compatibility with binary and ASCII protocols...)

Further enhance Quanta Extra' stellar performances with Qinertia PPK software

Qinertia's powerful CLI and REST API allow swift integration into all Cloud solutions

## 1-sigma errors over full temperature range [-20 to 60°C]

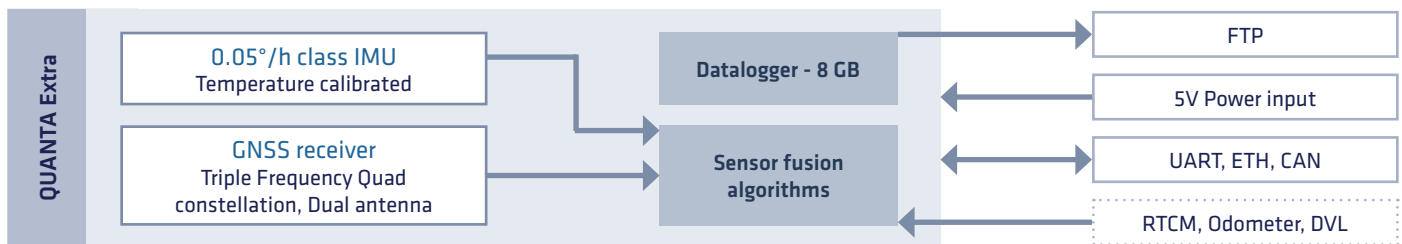
### INTERFACES

<b>Aiding sensors</b>	GNSS, RTCM, NTRIP, Odometer, DVL
<b>Protocols</b>	NMEA, ASCII, sbgECom (binary), REST API
<b>Ethernet</b>	Full duplex (10/100 base-T) PTP / NTP, NTRIP, Web interface, FTP
<b>Datalogger</b>	8 GB or 48 h @ 200 Hz
<b>Serial ports</b>	5x TTL UART, full duplex
<b>CAN</b>	1x CAN 2.0 A/B bus, up to 1 Mbps
<b>Output rate</b>	200Hz (IMU, INS)
<b>I/O</b>	5x inputs: PPS, Events in up to 1kHz 2x Outputs: SYNC out, PPS, Virtual odo LEDs drivers for status display
<b>Connectors</b>	44 pin contacts, 1.27 mm pitch, SMD 2x u.FL for antennas

### MECHANICAL & ENVIRONMENTAL

<b>Dimensions</b>	GNSS+Processing: 51.5 x 78.75 x 20 mm IMU : 83.5 x 72.5 x 50 mm
<b>Weight</b>	64 g + 295 g (IMU)
<b>Temperature range</b>	-20 to 60°C (specified)   71°C (operating)
<b>Operating vibrations</b>	8 g RMS (MIL-STD-810G)
<b>IMU Sensor range</b>	± 200°/s   ± 10 g
<b>Operational limits</b>	515 m/s 18 km altitude
<b>MTBF (computed)</b>	150,000 h

### BLOCK DIAGRAM



### SYSTEM PERFORMANCE *Performances during typical land mission*

Parameter	RTK	PPK	GNSS Outage 60s (PPK)
<b>Roll/Pitch</b>	0.008°	0.005°	0.008°
<b>Heading</b>	0.02°	0.01°	0.025°
<b>Position</b>	0.01 m + 0.5 ppm	0.01 m + 0.5 ppm	0.1 m

### GNSS

<b>Features</b>	SBAS, RTK, PPK Advanced anti jamming/spoofing enabled	RTK, PPK, Marinestar™ with integrated L-band modem
<b>Signals</b>	GPS: L1 C/A, L2, L2C, L5 GLONASS: L1 C/A, L2 C/A, L2P, L3 GALILEO: E1, E5a, E5b BEIDOU: B1I, B1C, B2a, B2I, B3I QZSS: L1 C/A, L2C, L5 SBAS	
<b>Update rate</b>	PVT: 5 Hz, RAW 1 Hz	
<b>Time to first fix</b>	< 45 s (cold start)	

### ELECTRICAL

<b>Power supply range</b>	5.0V DC +/- 5%
<b>Power consumption</b>	< 6.1 W
<b>Antenna Ports</b>	3-5.5V DC, 15-45 dB, max 150 mA per antenna Gain: 17 - 50 dB

### TIMING SPECIFICATIONS

<b>Timestamp accuracy</b>	< 200 ns
<b>PTP accuracy</b>	< 1 μs
<b>PPS accuracy</b>	< 10 μs (jitter < 10 μs)
<b>Drift in dead reckoning</b>	1 ppm

### Development Kit

Jump start your integration with the development kit allowing you to fully test Quanta Extra and start the Software integration before your own system is available.



Qinertia post processing Software is a needed companion to get the maximum performances from Quanta Extra:

- » Forward + Backward processing
- » Tight coupling Inertial + GNSS
- » Remove uncertainty of RTK availability
- » Kinematic VBS, and much more...

Free Technical Support

Unlimited Firmware Updates

2-year Warranty